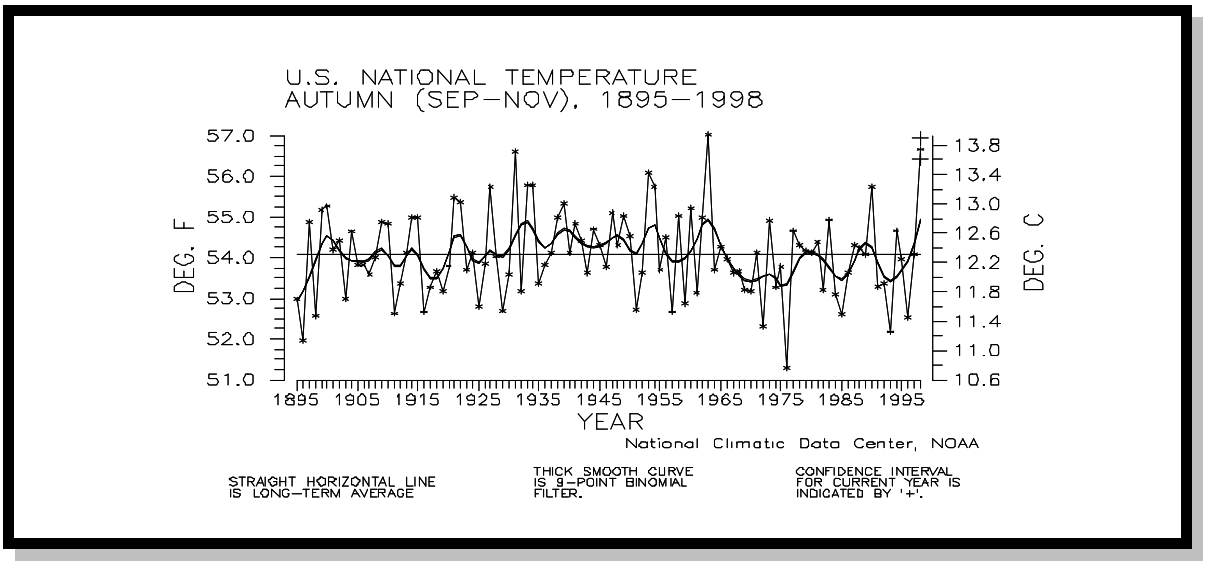
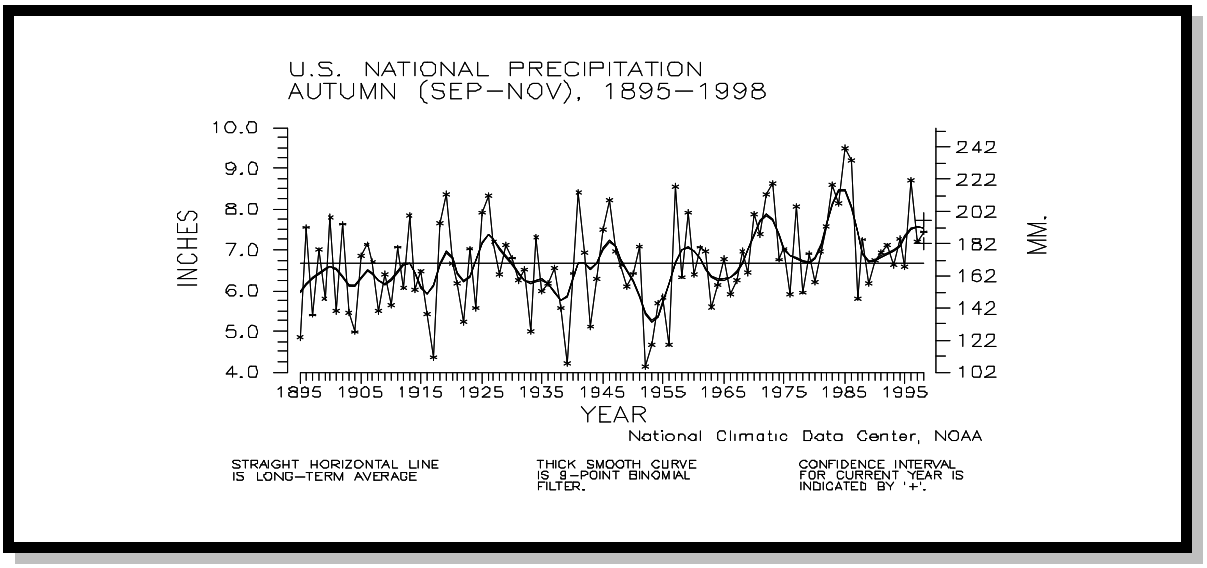
Monthly Activity Report

November 1998





Based upon preliminary data, Autumn (September-November) 1998 was the 2nd warmest such season on record for the U.S. since records began in 1895. Over 66 percent of the country was much warmer than normal, while less than one percent of the country was much cooler than normal.

Preliminary data suggest that Autumn 1998 was the 24th wettest such season on record for the U.S. since records began in 1895. Over 16 percent of the country was much wetter than normal, while nearly six percent of the country was much drier than normal.

DIRECTOR'S HIGHLIGHTS

Special Satellite Imagery Used at Press Conference

The National Oceanic and Atmospheric Administration (NOAA) Public Affairs Office released information concerning the National Climatic Data Center's (NCDC) Hurricane Mitch Report and Special Satellite Imagery at a special hurricane press conference held on November 30, 1998, the last official day of the hurricane season. The NOAA Public Affairs Office provided the information and images of Mitch to members of the press corps. The special report and images are available at: http://www.ncdc.noaa.gov/ol/reports/mitch/mitch.html

NCDC Meets with Air Force Personnel

The National Climatic Data Center (NCDC) Director Tom Karl, and Neal Lott of NCDC, met with Mr. Tom Kotz and Lt. Col. Virginia Dillon of the Air Force Combat Climatology Center (AFCCC), and Colonel Charles French, commander of the Air Force Weather Agency (AFWA, Offutt AFB, NE). Discussions included common interests of the agencies, current areas of cooperation, and future plans. NCDC provided a one-page background paper concerning past, present, and future cooperative efforts between NCDC and AFCCC, which is collocated with NCDC. Since NCDC and AFCCC are both involved in major computer systems migrations, more detailed discussions on cooperative efforts will take place next year after these migrations are completed. Also, AFCCC is just completing its consolidation of operations from two locations (Scott AFB, IL, and Asheville, NC) to one location (Asheville, NC).

Geneva Working Group Meetings

Michael Crowe, of the National Climatic Data Center, attended the Commission for Climatology's Working Group on Climate Data (WGCD) meetings in Geneva, Switzerland, November 30th through December 4, 1998. Mr. Crowe is the rapporteur on Global and Regional Climatological Data Sets and Station Networks and is the liaison between the WGCD and CC1's Working Group on Climate Change Detection. The group addressed international data exchange issues, particularly WMO Resolution 40; the Global Climate Observing System (GCOS) with particular emphasis on collecting data and monitoring data exchange for the GCOS Surface Network; the Climate of the 20th Century Project; and potential Year 2000 problems.

CLIMATE DATA AND INFORMATION SERVICES

✦ Data and Information Distribution

On-Line Sales Rise

Electronic mail contacts for November 1998 logged a 25 percent increase over November 1997 records, illustrating the growing customer preference for electronic mail as the contact media of choice. Demand for National Climatic Data Center (NCDC) data sets on the Internet showed continued growth during November 1998. To illustrate, 22,000 customers contacted the NCDC via the NOAA National Data Center (NNDC) On-Line Data Store on the World Wide Web last

month and accessed seven Gigabytes of climate data. Revenue from the NCDC On-Line Store during November 1998 represented an 18 percent increase over October 1998 sales figures. Analysis of on-line sales indicate that annual subscriptions for on-line data sets are growing in popularity with many NCDC commercial customers.

NRC Extreme Wind Pubs

The National Climatic Data Center (NCDC) was contacted by the National Research Council (NRC) to propose an update to NRC extreme wind pubs that were developed in the early 1980s for the East/Gulf coastline and the Great Lakes region. These were site return period analyses for all locations with appropriate extreme wind data, in this case fastest mile. NCDC anticipates using gust data for this update (gust is now used in the ANSI standard). NCDC will attempt to convert fastest miles to gust for the POR prior to gust measurement availability and will investigate corrections to the Automated Surface Observation System (ASOS) quasi-5 sec gust (to standardize to a 3 sec value). In addition, this will allow the opportunity to document the POR with erroneous gust data for early ASOS sites and the dates when correct chips were installed. If funded, this will likely be a 6-12 month task.

NCDC Releases New CD-ROM

The National Climatic Data Center (NCDC) has released the International Surface Weather Observations (INSWO) CD-ROM set, which contains five CDs and is compatible with MS-DOS, Windows-95, Windows-98, and Unix systems. The data set includes hourly and/or synoptic (every three hours) data, with 17 weather elements, for approximately 1,500 stations for 1982-1997. It provides good coverage of city locations around the world, with over 900 international stations and nearly 600 U.S. sites. The overall set contains nearly 15 gigabytes of data when uncompressed and is now available for purchase through NCDC's On-Line Store.

NCDC Releases Tech Report

The National Climatic Data Center (NCDC) released Tech Report 98-03, "Climatic Extremes of the Summer of 1998." The report provides details, graphics, and climatic data pertaining to drought and fires in Florida; a heat wave and drought across parts of the southern U.S.; flooding in China; flooding in parts of the U.S.; Hurricane Bonnie striking North Carolina and Virginia; and a general review of U.S. and global climatic conditions. Overall damages and costs for the events described in this report exceeded $30 billion (including more than $10 billion in the U.S.), and the death toll exceeded 3,000 (including over 200 fatalities in the U.S.). Tech Report 98-03 is available via NCDC's Web site and in paper copy form.

NCDC Delivers a Record-Breaking 100 GB of Data and Information to Web Users

The National Climatic Data Center's (NCDC) Web site reached a milestone in October of 1998 when users downloaded over 100 GB of data and information. This is the highest monthly amount since this service began in October 1992, when only 150 MB of data and information was delivered. Users during October 1998 also used the NCDC Web site to plot, graph, and download over 100,000 images of data and information. The more popular downloads were U.S. and Global Summary of the Day time series plots, satellite and Next Generation Weather Radar (NEXRAD) radar images, and Global Historical Climatology Network (GHCN) temperature and precipitation plots.

NCDC Expands Global Event Assessment

The National Climatic Data Center (NCDC) has expanded its assessment of global weather and climate events, with seven reports now on-line pertaining to 1998 events outside of the U.S. These include: El Nino-induced flooding in South America (Jan-Apr 98), flooding in China (Jun-Aug 98), flooding in North and South Korea (Jul-Aug 98), monsoonal flooding in India and Bangladesh

(Jul-Sep 98), typhoons and flooding in the Philippines (Sep-Oct 98), Hurricane Georges in the Caribbean (Sep 98), and Hurricane Mitch in Central America (Oct 98). These reports are accessible through the 1991-1998 Weather Events Web page. This page now links to 60 reports and Web pages on weather events during the period 1991-98, and is accessible through NCDC's central site for extremes and events.

Data Bar Code Label Plan

The National Cooperative Data Bar Code Label Plan is designed to expedite the inventorying of monthly cooperative observation forms. The form and bar code will be optically scanned upon receipt at the National Climatic Data Center (NCDC), and the Archive Records Check-in (ARC) database and Station Inventory Report located on NCDC's Web Home Page will be automatically updated. This inventory is used by customer service representatives and National Weather Service (NWS) managers. NCDC, in close coordination and cooperation with National Weather Service (NWS) managers in each region, implemented the plan this month. Bar code labels for all 10,037 NWS Cooperative Observing sites have been printed and mailed to 122 NWS Weather Forecast Offices and Regional Offices. These offices will distribute to each Cooperative Observer (COOP) a unique bar code label specifically encoded for that particular site. The label displays the 8-digit Station Identification Number which includes the division number and the official station name and state. The bar code data base includes considerably more information unique to the site. The observer will affix their unique label to their COOP observation form beginning with the January 1999 data month.

Global Climate Normals CD-ROM Released

The National Climatic Data Center released a CD-ROM describing the 1961-1990 global standard climate normals. Normals data from over 4,000 stations worldwide computed by more than 135 countries and territories were provided as part of the World Meteorological Organization CLINO activity. The CD-ROM contains data files, documentation files, eye-readable ASCII table files, graphics files showing which countries submitted data, and limited DOS extraction software. It also contains limited narrative metadata files, which describe normals computational methodologies for some countries. Climatic variables include maximum temperature, minimum temperature, mean temperature, precipitation, snowfall, snow depth, wet bulb temperature, dew point temperature, relative humidity, sea level pressure, vapor pressure, wind speed, wind direction, cloud cover, sunshine duration, soil temperature, evaporation, solar radiation, number of days with various weather elements (occurrence/nonoccurrence), and number of days with weather parameters beyond various threshold values. Computed statistics include mean, median, quartiles, extremes, frequency distribution, standard deviation, and number of years with non-missing data. The normals data and metadata that were provided vary from station to station and from country to country.

Coast Pilots

The National Climatic Data Center (NCDC) provided the National Ocean Survey (NOS) with 10 chapters, 12 climatological tables, and three offshore meteorological tables for the U.S. Coast Pilot Volume #3. Volume #3, of nine volumes, references the area from Sandy Hook, NJ, to Norfolk, VA, and the Chesapeake Bay.

ASOS METAR Data On-line

The National Climatic Data Center (NCDC) has completed development and implementation of the METAR MAE Archive software, TD6407. These data represent the closest thing to "original" Automated Surface Observation System (ASOS) observational data. The METAR MAE data begins with the July 1996 data month when the METAR format was officially implemented at the ASOS sites. The data are available through the Web

based On-Line Pseudo-Form Retrieval System and the archive files reside on the Hierarchical Data Storage System, which can be directly accessed via the Local Area Network. The User's Guide and Program Documentation are complete. The archive file is sorted by WBAN number and contains data for all six data types: hourly, summary of the day (SOD), summary of the month, SOD remarks, six hourly synoptic, and weather duration.

Volunteer Observing Ship (VOS) Cooperative Ship Reports on the Web

National Climatic Data Center personnel enhanced the Marine System to provide ship reporting information to the Center's Web site. Port Meteorological Officers now have immediate access to VOS observation count information.

Rescuing Historical Data, the Scanning Continues

The conversion of paper records containing surface weather observations to digital images continues at full production. To date, the National Climatic Data Center (NCDC) has shipped 21,089 boxes of records to the West Virginia contractor. The contractor has returned 7,811 boxes and the return shipments are now being made weekly. NCDC has received back 800 CD-ROMs containing some 5.9 million images. The quality assurance process has completed 768 CDs, and the NCDC quality review process has completed 740 CDs.

Potential Cooperative AWIPS Development

The National Oceanic and Atmospheric Administration (NOAA) Forecast Systems Laboratory (FSL) is developing a prototype Advanced Weather Information Processing System (AWIPS) operational data repository to archive AWIPS and associated metadata, and to produce case-study data sets for training and research. National Climatic Data Center (NCDC) staff will continue discussions with FSL on a potential cooperative effort among FSL, NCDC and COMET to develop the prototype system and to establish an operational archive and access system for NOAAPORT data at NCDC.

NOAA National Data Center Reps Meet with ESRI

Dan Manns of the National Climatic Data Center (NCDC) and Ted Habermann of the National Geophysical Data Center (NGDC) traveled to the Environmental Systems Research Institute (ESRI) headquarters in Redlands, CA, on November 23, 1998, to meet key ESRI personnel and to discuss various aspects of the ESRI Tools being used in the NNDCServer. ESRI will accommodate National Environmental Satellite, Data, and Information Services (NESDIS) needs in each of the next product versions for the Spatial Data Engine and the Internet Map Server which come out in FY99. ESRI has a service for providing Arc-compatible data on-line. It is called ArcData On-Line (ADOL) and is available at http://data.esri.com. The goals of ADOL are twofold: to provide data in compatible formats to users and to provide data providers with access to the latest ESRI Web services technology. The system also includes the capability to charge customers for data that they download. ESRI is very interested in finding a way for NOAA to participate in this project. This will be an important step in developing NESDIS's relationship with ESRI and in evolving the technology used in the NNDCServer. The NNDCServer technical team is prepared to give a demonstration of the data download/charge capability for the NOAA Virtual Data System board.

Implementation Of Build 10

The National Climatic Data Center (NCDC) has implemented WSR-88D Build 10 software. Once NCDC began receiving and processing the first data tapes generated by the newest version of the National Weather Service radar operating system, it quickly became obvious that the current copy and reformat software needed several revisions to

handle exceptions to the normal flow of data. The copy and reformat software and the merge software also had to be revised and are being tested. Production runs will be closely monitored for unexpected events. The extraction software should be revised during December.

✦ Research Customer Service Group Requests

Data Provided to Canadian Forest Service

The National Climatic Data Center (NCDC) provided all 1998 surface hourly and synoptic data from the Russian Republics to the Canadian Forest Service in Sault St. Marie, Ontario. The Forest Service is using the data in conjunction with Advanced High Resolution Radiometer (AVHRR) images (also acquired from NCDC) in a joint study with the National Aeronautics and Space Administration (NASA) of wildfires in Siberia. The fires are being compared with fires in other parts of the world (including Canada), and to the 1987 outbreak in Siberia, the last outbreak with similar severity to this year's fires.

NCDC Supplies Data to CPC

The National Climatic Data Center (NCDC) supplied the National Centers for Environmental Prediction's Climate Prediction Center (CPC) with degree day data from NCDC's disk resident file. Monthly totals of state and divisional heating and cooling degree day data for the entire period of record (since 1895) were ftp'd from the climate workstation. Both preliminary data and data derived from time bias corrected temperatures were supplied for CPC's analysis.

✦ Satellite Data Requests

Hurricane Mitch Images

Satellite images of Hurricane Mitch, the fourth most powerful hurricane in the Atlantic Basin this century in terms of pressure, were provided to the National Oceanic and Atmospheric Administration Legislative Affairs Office for distribution to several Congressional offices. Hurricane Mitch is blamed for at least 11,000 deaths in Central America, making it one of the most fatal hurricanes of this century in the Western Hemisphere. Most of the deaths occurred from massive mud slides in the mountainous regions of Nicaragua and Honduras.

Published Satellite Image

A trade magazine for outdoor goods will publish a GOES-8 satellite image of the U.S. along with an article on long-term weather forecasting and how the trade industry depends on these forecasts for their livelihoods. The particular image for the article was selected by the writer who browsed dozens of low resolution images archived on-line on NCDC's Historical GOES Browse server. The image depicts a large winter storm affecting most of the eastern U.S.

Fires Provide Cooling Effect

Researchers at the Institute of Atmospheric Sciences at the South Dakota School of Mines and Technology claim that 125 million tons of smoke is released each year from biomass burning in the tropics. This, plus aerosols generated from forest fires, dust storms, and volcano eruptions, creates a cooling effect that may offset global warming. To measure how much solar radiation is being reflected back into space, the scientists used satellite data supplied from several sources, including the National Climatic Data Center (NCDC). They have been able to estimate radiative forcing of atmospheric aerosols from biomass burning as well as develop a technique to spot aerosols in satellite imagery.

✦ Requests from News Media

Hurricane Mitch Movie on the Learning Channel

A United Kingdom based production company called Pioneer Production is preparing to make a

movie of Hurricane Mitch while it was at its most intense stage. The movie is scheduled to be shown on the Learning Channel around the second week of January 1999. The topic of the program, called "Storm Forces," will be on global catastrophes. Mitch will be remembered as the most deadly hurricane to hit the Western Hemisphere in more than 200 years. Mitch is blamed for approximately 11,000 deaths in Central America.

✦ Technology Applications

New Revision of NOAA Polar Orbiter Data User's Guide

NCDC-Suitland incorporated all the modifications that have been made to the NOAA Polar Orbiter Data User's Guide since August 1997 into a new revision, dated November 1998. In addition to updating the WordPerfect and Postscript files on NCDC's ftp server, the Web site (http://www2.ncdc.noaa.gov/docs/podug/index.htm) was also modified. At this time, there are no plans to print any hard copies.

Frame Relay Communications System Installed

A Frame Relay telecommunications capability has been installed connecting the three data centers. The Frame Relay provides a designated bandwidth of communication capabilities and will be used initially to support the new Customer Order and Management Processing System (COMPS). The Frame Relay system is scalable and will permit the widening of bandwidth in response to future demands for increased capacity. Initial results indicate excellent reliability and improved access. Other candidate components of the NOAA Virtual Data System (NVDS) Initiative are being reviewed to determine the best use of the inter-Center dedicated network. Doug Snowden, of the National Climatic Data Center, in close cooperation with the other two data centers, coordinated the design and installation of this system.

Lotus Notes Installation

Lotus Notes has replaced the old MS Mail and CaLANdar systems at the National Climatic Data Center. Lotus Notes was selected after considerable examination of commercial options. The Center's goal was to install a system that provided much more than a replacement to the obsolete E-mail and Calendar systems. Lotus Notes provides a wide spectrum of customization features that support a variety of Business Operations. Lotus Notes is already delivering never-before-available capabilities in support of the new Customer Order and Management Processing System (COMPS). The migration and customization design work was supported by the contractor, Solutions By Design.

✦ Regional Climate Centers

RCC Activities

The development of a full Customer Service Plan is progressing. A draft plan has been completed and is now at the Regional Climate Centers (RCC) for comment. The goal is to have the customer serving functions of the National Climatic Data Center (NCDC) and the RCCs to be fully integrated within three years. As an initial step, the user service staff from the Midwestern Climate Center and the Western Regional Climate Center participated in a week long staff exchange with NCDC.

Plans have been completed to conduct a full review of the State Climatologist Program. Several State Climatologists, a former State Climatologist, and a Regional Climate Center Director will participate in the January review. The goal is to have this review completed by late summer 1999.

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

✦ Working Groups/Committees/ Meetings

Scientific Data Centers Symposium

National Climatic Data Center (NCDC) meteorologist Tom Ross was a participant at the third annual Scientific Data Centers Symposium held on November 2-4, 1998, at the National Oceanic and Atmospheric Administration (NOAA) Science Center at NOAA's Silver Spring, MD, headquarters. The symposium was co-sponsored by NOAA/National Environmental Satellite, Data, and Information Services (NESDIS) and focused on a broad range of applications for space and earth science data. NCDC was one of the three NOAA National Data Centers (NNDC) in attendance, and the new NNDC joint data center exhibit was unveiled for the first time. The exhibit featured the themes of atmospheric and climatic data, geophysical data, and oceanographic data. The exhibit will be displayed at the upcoming American Geophysical Union (AGU) annual meeting in early December 1998 and at the American Meteorological Society annual meeting in January 1999.

Customer Order Management Processing System (COMPS)

An upgraded version of COMPS, Build 2.0.4, was delivered during the month of November. Several National Climatic Data Center (NCDC) users continue to enter orders into the COMPS system and provide suggestions. Fiscal personnel continue to enter National Oceanographic Data Center (NODC) payments into the COMPS system. Testing continues with the On-line Store team. Implementation of Frame Relay has improved speed for National Geophysical Data Center (NGDC) and NODC COMPS users.

✦ Visitors

Visit by CIA

On November 6, the National Climatic Data Center (NCDC) hosted three visitors from the Central Intelligence Agency's (CIA) Analytical Support Team, which provides climatology and weather support for the CIA. NCDC has had ongoing discussions with the CIA over the past few years related to their use of NCDC data and possible contracts for additional data, such as satellite. The meeting focused on global surface data and normals, satellite data, and Geographic Information Systems (GIS) such as Arcview. The CIA currently uses several NCDC data sets, such as the Global Historical Climatology Network and the Global Summary of Day data set.

U.S. Historical Climate Network Study

Dale Kaiser, Deputy Director, Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, Oak Ridge, TN, visited the National Climatic Data Center (NCDC) to discuss U.S. Historical Climate Network (USHCN) data issues. Based on this meeting, Dr. Kaiser requested that NCDC personnel review and edit portions of the USHCN draft document currently being written by the Carbon Dioxide Information Analysis Center at the Oak Ridge National Laboratory.

ORA Visitor

Norman Grody of the Office of Research and Applications (ORA) visited the National Climatic Data Center (NCDC) November 16-19. ORA is supporting NCDC in the development of an AMSU-derived snow cover product. The primary reason for his visit was to work with NCDC scientists on the initial stages of this product development effort.

Arizona State University Researcher

Russ Vose, a researcher from Arizona State University and co-principal investigator of the Global Historical Climatology Network (GHCN), installed software at the National Climatic Data Center (NCDC) that he wrote to easily add additional stations to GHCN. This software package uses FORTRAN, PERL, SAS, and Bourne shell scripts, runs on a Unix workstation, and subjects the new data to GHCN's full suite of duplicate elimination and quality control procedures. In addition to providing a 26-page documentation entitled "How to Make GHCN Bigger: A Step-By-Step Guide for Getting that New Set in There," Russ instructed NCDC personnel on use of use the software.

EMPLOYEE ACTIVITIES

✦ EEO and Community Outreach

NCDC's Federal Women's Program Leads Fund Drive

The National Climatic Data Center's (NCDC) Federal Women's Program organized a collection to provide Thanksgiving dinners to the homeless. Several hundred dollars were collected and presented to David Hayes, Director of the Western Carolina Rescue Mission, on November 20th. This was a joint effort by NCDC and Orkand Corporation employees.

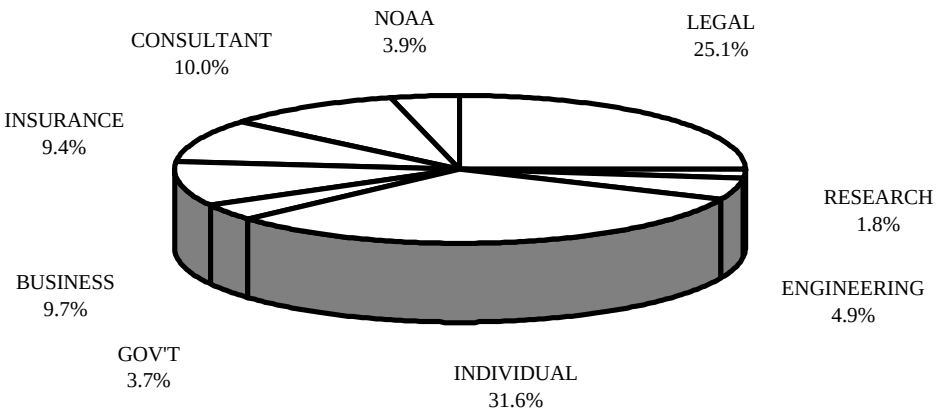
✦ Training

NCDC Hosts RCC Training Program

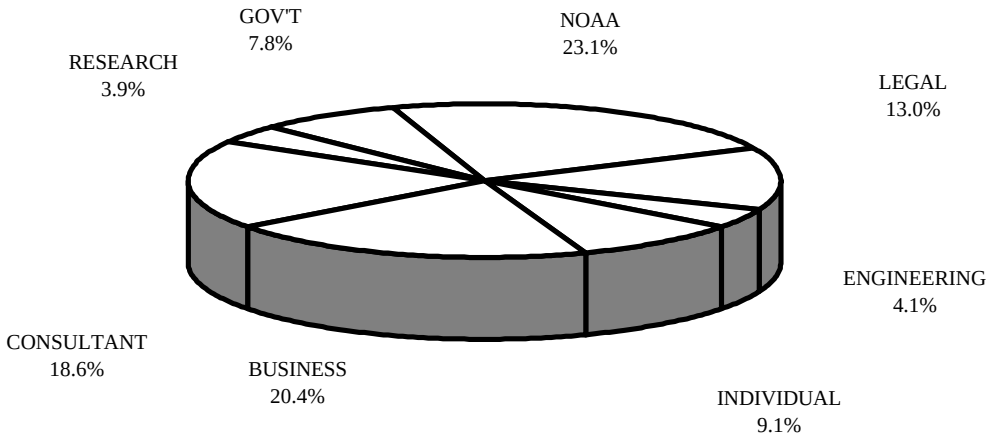
The National Climatic Data Center (NCDC) hosted two Regional Climate Center (RCC) Customer Services personnel during the week of November 16-20 as part of the NCDC/RCC Climate Services Integration Plan. Major goals of this program are to cross-train RCC and NCDC customer service staff so that they all have a better understanding of what each Center provides in the way of products and services and to better integrate climate data servicing. The training was given to Jim Ashby from the Western Regional Climate Center (WRCC) and Karin Gleason from the Midwest Climate Center (MCC). The training helped the RCC personnel become more familiar with NCDC's on-line and off-line products and services offered to the general public and research community. They also received in-depth training of NCDC customer service support, outreach activities, WWW access, On-line Store activities, databases and systems training useful for customer support. NCDC will host additional RCC staffers throughout the spring and fall of 1999. NCDC staff will visit the RCC's later in 1999.

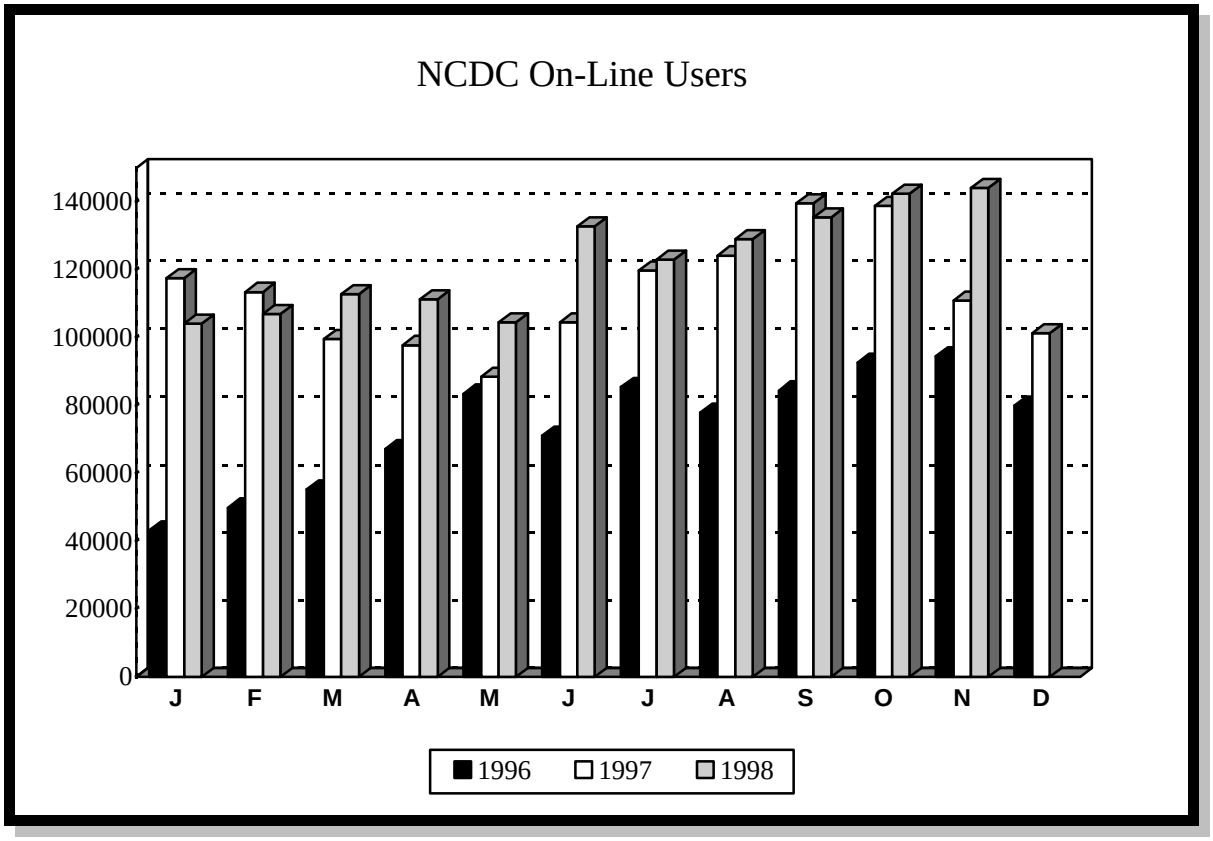
The following charts and graphs show the latest National Climatic Data Center user and data statistics.

Customer Profile Based on Orders



Customer Profile Based on Order Cost




NCDC On-Line Users
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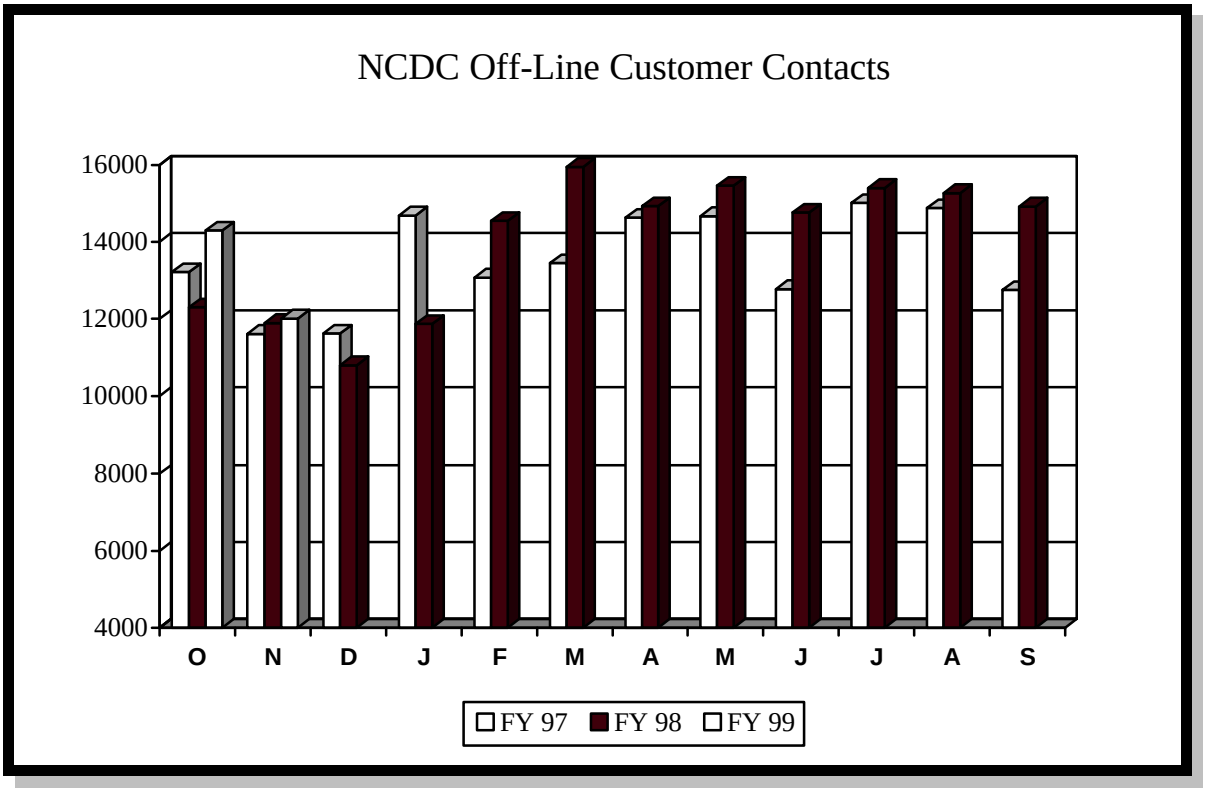
80000
60000
40000
20000
0
J F M A M J J A S O N D
1996 1997 1998


NCDC Off-Line Customer Contacts
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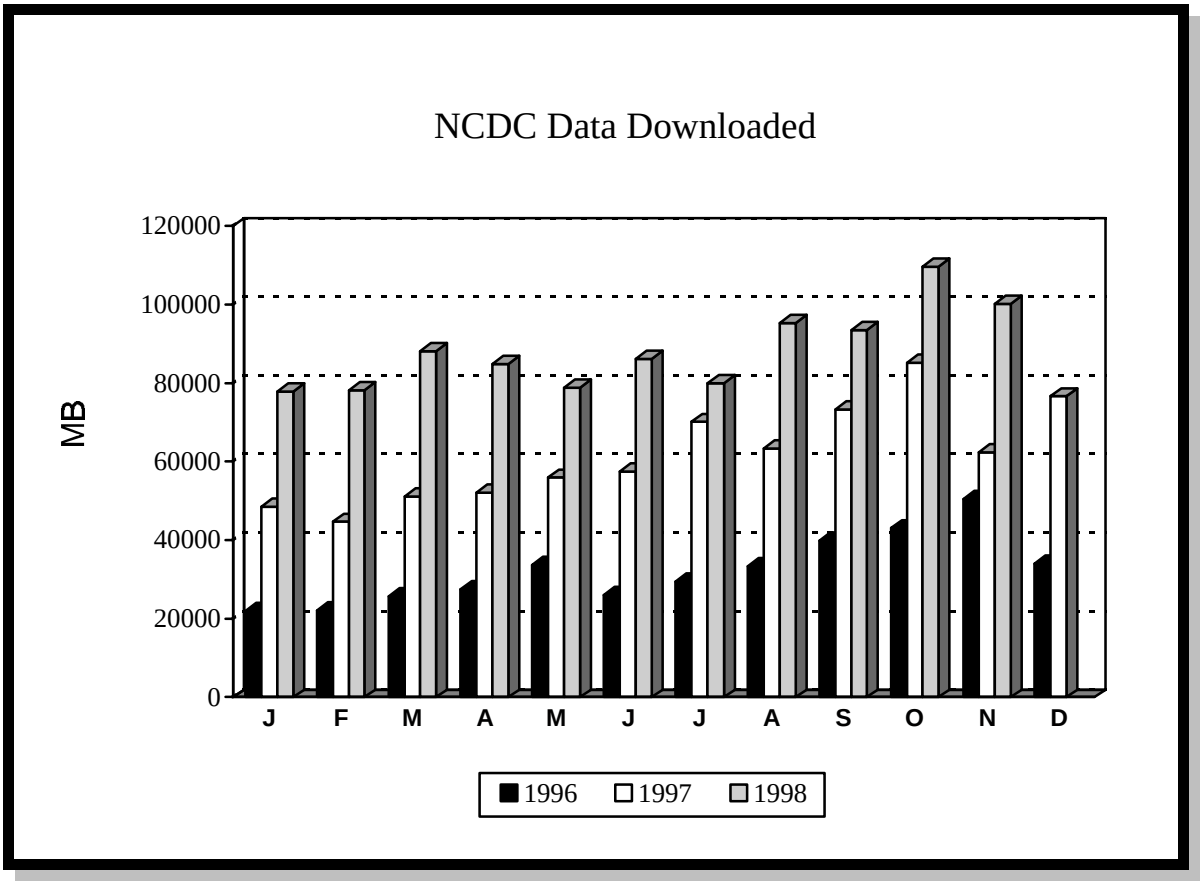
14000
12000
10000
8000
6000
4000
O N D J F M A M J J A S
FY 97 FY 98 FY 99


NCDC Data Downloaded
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80000
60000
40000
20000
0
J
F
M
A
M
J
J
A
S
O
N
D
1996
1997
1998